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EDITORIAL NOTE

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RETAIL SALES DURING THE WAR

Limitation of supplies, higher money incomes and the opposing effects of rationing and propaganda in favour of war savings, evacuation and the creation of new industrial centres for war production have now been at work for nearly two years, and their joint effects on the supply of certain consumption goods have been becoming increasingly obvious to the consumer. The two following articles attempt to describe the nature and extent of changes in consumption of food and other consumers' goods since the outbreak of war.

The first article analyses the Bank of England retail trade statistics, indicating the main trend in the consumption per head of various commodity groups. An attempt is also made to correlate relative changes of consumption in various regions to war-time population movements.

The second article is particularly concerned with changes in food consumption, and is based on statistics of the grocery sales of a large multiple store, supplied by courtesy of the management. The qualifications and limitations of the sample which necessarily occupy a large part of the article, must be borne in mind. Nevertheless the impression made by the first article, that real consumption per head has undergone considerable reductions, appears to be substantiated by this more specific analysis.

The Editor.

A. TURNOVER AND POPULATION MOVEMENTS

The Trend of Retail Sales

The object of this article is to present a general picture of changes in retail sales during the war, based on the Bank of England Retail Sales Indices. These figures relate to a large sample of department stores, concerns operating multiple retail shops, independent retailers, and a representative section of the retail co-operative societies. Indices for seven regions of Great Britain, as well as a national index, are published for each month, and corresponding to each total index there are indices of the retail sales of food and perishables and of non-food merchandise. Two principal constituents of non-food merchandise, apparel[1] and household goods[2] are also shown. All the indices are subject to seasonal fluctuations, and in order to study the trend of sales it was first necessary to remove them. The average of the three months in each quarter of the year was taken as a quarterly index, an average of seasonal fluctuations of this quarterly index in 1936–8 was then calculated and used to obtain corrected quarterly indices for the war years. The corrected indices were finally expressed in such a way that the average sales of 1938 were 100 in each case.[3]

Table I

Quarterly Indices of Retail Sales in Great Britain after removal of seasonal fluctuations.

	av. 1938	1939				1940				1941
		1	2	3	4	1	2	3	4	1
Total	100	100	103	107	101	107	106	111	103	107
Food and Perishables	100	101	105	105	104	107	109	109	102	109
Other Merchandise	100	101	100	108	97	108	102	117	100	105
of which										
Apparel	100	101	103	108	98	112	102	122	107	111
Household Goods ...	100	97	98	100	89	100	95	97	81	80

Table I shows the corrected quarterly indices for Great Britain. Before commenting on them it must be emphasized that the original monthly figures are not fully representative owing to the difficulty of obtaining an accurate sample of individual retailers.[4] This error is particularly important in war-time owing to the large movements of population which may be accompanied by shifts from large shops to individual retailers in small towns and villages. Such a shift would tend to make the indices of money sales too low. Another source of error is introduced by bombing. If a sample shop is closed for a day or more due to enemy action the Bank of England now makes a correction for trade of this shop. This correction may, however, make the final index of sales too high since one probable effect of the loss of a particular shop is to increase the sales of other shops, some of which may be included in the sample. Bearing in mind the qualifications with regard to the accuracy of the figures, we may conclude that the trend of *sales* (in money terms) of both food and non-food merchandise has been very slightly upwards since the beginning of the war. Of the individual items sales of apparel rose rather more than the total sales, but sales of household goods declined steadily and in the first quarter of 1941 were 20 per cent. below the level of 1938. All the indices (except food) show a sharp rise in the third quarter of 1940, reflecting heavy buying in anticipation of the Purchase Tax. Actually pre-Purchase Tax buying was even more marked than these indices suggest since the monthly sales figures reached a peak in October which is included in the fourth quarter.[1]

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[1] Piece-goods (dress materials), women's wear, men's and boys' wear, boots and shoes.

[2] Piece goods (household goods), furnishing departments, hardware.

[3] It need hardly be stressed that this removal of seasonal changes, based on three years only, is not very accurate, but it was essential that no war years should be included in the calculation of average seasonal changes; for example if 1940 had been included the heavy pre-Purchase Tax buying in the third quarter would have been counted as a 'seasonal' element.

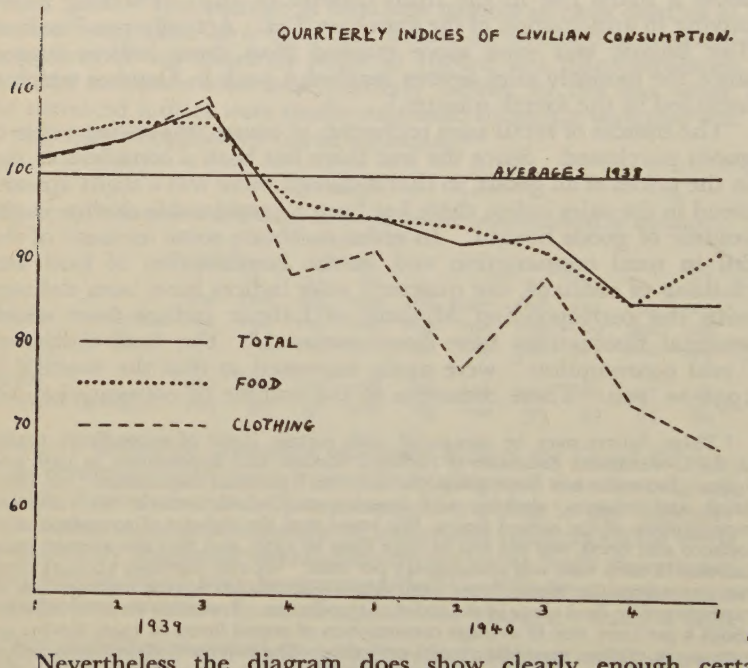
[4] See, for example, *Board of Trade Journal* of April 3rd, 1941 (page 227).

The indices of retail sales represent, of course, the selling value of goods purchased. Since the war there has been a considerable rise in the prices of all goods, so that although there was a slight upward trend in the sales index, there has been a considerable decline in the volume of goods bought. In order to obtain some measure of the fall in total consumption and in the consumption of food and clothing of civilians, the quarterly sales indices have been deflated with the corresponding Ministry of Labour indices from which seasonal fluctuations have been removed.[2] The final indices of " real consumption " were again expressed so that the average of 1938 = 100. These measures of the volume of consumption are

[1] These figures may be compared with certain items of expenditure shown in the Government Estimates of National Income and Expenditure in 1938 and 1940. Estimates are there given for the total ' personal expenditure ' on food, drink and tobacco, clothing and laundry etc., which include the estimated consumption of the armed forces. We know that the volume of consumption of tobacco and drink was not less in 1940 than in 1938, and that the average price increase in each case was about 40-45 per cent. We can therefore abstract these two items from the White Paper food, drink, and tobacco figures, leaving a rise in expenditure on food alone of the order of 13 per cent. From this we must subtract about 5 per cent. due to average consumption of armed forces in 1940, leaving an increase in civilian expenditure of 8 per cent. The corrected Retail Sales Index (Table I) shows an average increase in civilian expenditure of just under 7 per cent. in the corresponding period. For clothing and laundry the White Paper shows an increase of 9 per cent. in total expenditure, while the Retail Index increased by 11 per cent. The agreement is even less close than this because of the inclusion of some amount for uniforms in the White Paper figure.

[2] The clothing price index is given only roughly (e.g., for December 1938 the cost of clothing was 105–110 per cent. higher than in July 1914). This index does not show any significant seasonal changes, and in view of its approximate character no attempt was made to remove them.

subject to considerable error. Firstly as has been already pointed out the retail sales figures themselves may not be fully representative. Secondly the sample of goods in the various groups (Apparel, Food, etc.), included in the Cost of Living Index is that sample bought by a working-class family in 1904 (corrected in 1914), whereas the Bank of England figures cover a much wider range. Some of the principal Ministry of Food subsidies are applied to items entering in the Cost of Living Food Index e.g. meat and bread, and most rationed foods (for which price control is consequently more effective) are also included in the index with weights which are now too large. It is possible therefore that the decline in the consumption of food by civilians was greater than is shown in the diagram. The clothing and total consumption indices are also subject to error owing to unknown differences in the groups of goods used to obtain the retail sales and cost of living figures.



Nevertheless the diagram does show clearly enough certain striking trends in the volume of consumption of civilians. There was a decline of about 20 per cent. between the beginning of the war and the first quarter of 1941 in total civilian consumption of all goods. This does not mean that consumption *per head* has fallen by this amount, for we may assume that something of the order of 3 million men have been withdrawn from the civil population to the forces and are now fed and clothed directly by the Government. We must therefore allow for a decline of about 7 per cent. in the civilian population and thus consumption of all goods *per head* fell in the period mentioned by about 13 per cent. Making the same allowance for food and clothing we obtain declines in consumption *per head* of 3–8 per cent. and 35 per cent. respectively.[1] The latter shows clearly the effect of the Limitation of Supplies (Woven Textiles) Order. There is, unfortunately, no separate index for the price of household goods. Wages, however, had risen in the first quarter of 1941 by about 20 per cent. above the level of the immediate pre-war months, while the price of most of the materials used for household goods had increased in even greater proportion. In textiles, for example, one can compare the 75 per cent. increase in clothing prices. Thus a minimum increase of 25 per cent. in the price of household goods can be reasonably assumed, which means that consumption *per head* of household goods probably fell by at least 35 per cent.

Population Movements and Changes in Retail Sales

Since the beginning of the war there have been tremendous shifts of population due to evacuation from danger areas or defence zones and the movement of workers into armament industries. The geographical distribution of unemployment has also altered considerably. These changes are reflected in the retail sales indices for the seven regions of Great Britain. As before, the seasonal fluctuations of the calculated quarterly indices have been removed and in Table II the figures for the war years are given.

Table II

Quarterly Indices of Retail Sales in Regions after removal of seasonal fluctuations

	av. 1938	1939				1940				1941
		1	2	3	4	1	2	3	4	1
Scotland	100	101	104	107	108	112	115	124	124	122
North East	100	99	101	109	107	106	107	123	118	115
North West ...	100	101	102	109	107	110	110	124	118	117
Midlands and S. Wales	100	102	106	113	108	110	114	113	118	119
South of England ...	100	101	105	112	111	117	113	112	114	121
London Central and W. End	100	97	95	86	68	87	71	69	57	67
London Suburban	100	100	103	105	95	104	105	112	82	93
Great Britain ...	**100**	**100**	**103**	**107**	**101**	**107**	**106**	**111**	**103**	**107**

The geographical changes in retail sales are remarkable. Of the seven regions, only the two London regions, together covering the London Postal Area, have fallen both absolutely and relatively to the index for the whole of Great Britain. London Central and

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[1] In view of the qualifications mentioned above the decline in food consumption should be considered as a minimum estimate.

West End containing probably the largest agglomeration of shops in a restricted area in the country, shows the biggest decline since the war broke out. The figures show clearly the effects of the first evacuation of the early days of the war and again the reduction due to the large scale bombing of the last four months of 1940. The bombing also shows its effect in the figures for the suburban area of London. In all the other regions sales have increased rather more than the average for the whole country. In particular sales in Scotland have been consistently above the average and seem to have increased more rapidly than anywhere else.

It would be interesting to compare the changes in sales with the movements of population into and out of the corresponding regions. There are no detailed figures for such shifts of population issued at regular intervals, but in February of this year *World's Press News* published a map showing the percentage changes in civilian population for each county in England and Wales between 1938 and November 1940. Assuming that the 1938 figure refers to the Registrar-General's estimate of population in each county for the middle of that year, it has been possible to estimate the actual numerical changes for each county. The counties were then grouped in the Bank of England Retail sales regions and the corresponding percentage changes in population were calculated. Unfortunately the movement of population figures refer only to the County of London, while the two London regions of the Bank of England indices cover the London Postal area, which includes parts of the surrounding Home Counties. Thus reasonably accurate estimates of population changes between mid 1938 and November 1940 can only be given for four of the seven sales regions. For the sales themselves the average of the second and third quarter of 1938 were taken as a base and the percentage changes between 1938 and November 1940 were calculated.[1] We thus have for each region the change in population and the change in sales between 1938 and November 1940. The trends of civil population and sales in the

TABLE III

Percentage Changes between mid 1938 and November 1940 in Population and Retail Sales in Various Regions in excess of the average changes for the whole country.

	Scotland	N. East	N. West	Midlands and S. Wales	South of England	London C. & W. End	London Suburban
Population ...	?	− 2	− 1	+ 5	+ 11	− 25*	
Retail Sales	+ 20	+ 13	+ 13	+ 13	+ 14	− 52	− 19

* County of London.

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[1] The index for the fourth quarter of 1940 was taken to represent November. It should be remembered that this index is rather inflated by the pre-Purchase Tax buying in October.

whole country, however, have been different; the former has declined, due to mobilization, while the latter has increased. In order to make a proper comparison, therefore, the changes in each case are measured as the excess above or deficiency below the average for the whole of Great Britain.

There is clearly no very close correlation between the movements of population and changes in sales. In the South of England the two figures correspond well, in London sales seem to have fallen even more than the population, while in the North a relatively stationary population increased its share of national retail spending by 13 per cent. between 1938 and November 1940. The relative increase in sales per head in the North is probably due to the fact that before the war unemployment in this area was very much above the average for the whole country, while by the end of 1940 unemployment had been reduced to a very low level. In fact it is probable that the heaviest overtime working is concentrated in the North. The evidence of Table III suggests, therefore, that since the war began the centre of gravity of relative 'prosperity' has shifted back again towards the North.

G. D. N. Worswick.

B. CHANGES IN GROCERY SALES

The data relating to the retail sales of groceries since September 1939, which are analysed in this article, were supplied by shops in towns in various parts of the country, catering mainly for people with small incomes. Our sample is very large, and it can be assumed to represent at least one-tenth of the consumption of groceries of the working-class population. The figures received by us give the money turnover and the quantities sold for one sample week in each month, and also the corresponding figures for the last pre-war year, ending July 1939. On this basis we have attempted an analysis of certain changes in the consumption of groceries since the outbreak of the war.

Under peace-time conditions, changes in the total number of customers would have called for little adjustment over so short a period for so large a sample. At most it might have been necessary to assume a small steady rate of increase and to make some corrections for changes in the number of shops covered by our sample. This, however, would not meet the situation at present, when evacuation and air attacks on the one hand, and conscription and labour movements due to the war-time organization of industry on the other, are disturbing influences, which often have sudden and quite unforeseeable effects on the number of customers served by the shops in a given town.

Fortunately, some means of gauging these effects is available since the introduction of rationing, which at first[1] dealt only with butter, bacon, and sugar. By the budget inquiries carried out by our Institute in May and October 1940, it is indicated that most of the families of the income groups representing the main body of consumers in our sample, took their full sugar ration. As during the period covered by this present investigation members of the forces on leave received more than an amount equivalent to the ration for civilians, some slight ' underconsumption ' as regards civilian rations of sugar may be assumed to be counterbalanced by such ' overconsumption ' by members of the forces. Hence the number of sugar rations sold during a sample week may be taken to indicate roughly the number of customers, for those periods during which there were no special allowances of sugar for jam making. With rations swollen by such allowances it is, of course, no longer possible to estimate in this way the number of customers, and we have to resort to more complicated devices for obtaining some approximation. In this latter case, the margin of error is bound to be somewhat greater; but from the detailed information at our disposal we are satisfied that our estimates are reasonably correct. Before the war, the national average consumption of sugar as such has been estimated at about 18 oz. a head a week, and we believe our figure of 17·6 oz. a head to represent about the average pre-war consumption of the families served by the shops of our sample. By means of these data of average sugar consumption we have been able to calculate indices indicating the changes in the total number of sugar 'rations'[1] bought from the sample shops since the first month of the war (Table II, column 12).

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[1] From January 8th, 1940.

'AVERAGE ' CONSUMPTION AND CASUAL CUSTOMERS

If the consumers represented by these 'rations' were also the consumers, and the only ones, of all the other groceries retailed by the shops of our sample, it would be easy to draw a fairly comprehensive picture of the variations in the individual consumption of groceries since the war. No such assumption can, however, be made. Before the war, most of the shops of our sample were what perhaps might be termed 'specialist' shops, with a definite appeal to the casual customer for certain types of their foodstuffs, in particular bacon and inexpensive imported dairy produce—butter, cheese, and eggs. By 'casual ' customers we mean persons in the habit of buying the more standardized commodities—margarine, lard, sugar, jam, etc.—from shops not represented in our sample group, for instance from a local greengrocer, but obtaining their supply of some or all of the 'special' commodities from shops for which our sample is typical. In the first two columns of Table I

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[1] In this article we shall speak of sugar ' rations' whenever referring to the weekly consumption per head, whether or no sugar was actually rationed during that particular period.

TABLE I

	Average Consumption per head per week.		Weekly Purchases per Sugar Ration Sold.											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Sir J. Orr, 1934	Min. of Labour, 1937–38	Average 1938–1939		Sept. 1939		Jan. 1940		May 1940		Sept. 1940		Jan. 1941	
			Quantity	Av. Price per lb.	Quantity	Av. Price per lb.	Quantity	Av. Price per lb.	Quantity	Av. Price per lb.	Quantity	Av. Price per lb.	Quantity	Av. Price per lb.
	oz.	oz.	oz.	*pence*	oz.	*pence*	oz.	*pence*	oz.	*pence*	oz.	*pence*	oz.	*pence*
Butter	7·8	7·6	9·7	*14*	9·8	*14¾*	3·9	*18*	4·5	*18*	3·1	*18*	2·0	*19*
Margarine	2·5	3·0	3·0	*6¼*	3·1	*6*	4·4	*7*	3·9	*7¼*	2·6	*7½*	4·4	*8*
Lard	{3·9	2·1	1·7	*5¾*	2·1	*6*	0·3	*8¾*	0·6	*11¾*	0·6	*9*	0·8	*9*
Cooking Fat		2·2*	0·3	*5*	0·3	*5½*	1·3	*6*	0·8	*7*	0·6†	*6½†*	1·0†	*6½†*
I. *Outlay on Fat Foods* ..				*10½*		*11¼*		*7*		*7½*		*5¼*		*5½*
Bacon‡	7·0	5·9	13·1	*12*	10·4	*12¾*	4·4	*18*	7·2	*15½*	4·6	*16¼*	5·2	*17*
Cooked Meat§	—	—	2·4	*9¾*	3·2	*9¾*	1·9	*12½*	1·3	*16¾*	1·1	*16¾*	1·5	*14½*
Sausages	—	—	2·9	*7*	2·0	*7*	3·6	*8¼*	2·1	*10¼*	1·2	*10*	2·1	*8½*
Cheese	3·0	3·0	5·8	*8¾*	5·5	*8¾*	5·3	*10¾*	5·8	*11*	4·2	*13½*	3·7	*13½*
Eggs	No. 2·9	No. 3·7	No. 4·0	per egg *1½*	No. 3·3	per egg *1½*	No. 3·4	per egg *1½*	No. 3·0	per egg *1¾*	No. 0·7	per egg *2¼*	No. 1·5	per egg *2¼*
II. *Outlay on Protein Foods*‖ ..				*22*		*20¾*		*18¼*		*20½*		*12¾*		*15¼*
	oz.	oz.	oz.		oz.		oz.		oz.		oz.		oz.	
Sugar	17·8	20·4	17·6	*2½*	27.8	*3¼*	12·0	*4½*	12·0	*4½*	8·0	*4¾*	8·0	*4*
Jam and Marmalade	5·2	4·2	3·2	*5½*	3·9	*5½*	3·3	*6¾*	4·2	*7¼*	2·5	*7¾*	5·6	*8½*
Cake and Biscuits§	—	—	3·7	*7¼*	3·2	*7¼*	3·1	*7¾*	5·0	*8¼*	3·4	*9*	3·6	*9¾*
Flour§	—	18·7	6·4	*1¾*	7·9	*1½*	7·7	*2*	10·0	*1½*	7·2	*1½*	8·6	*1¾*
III. *Outlay on Carbohydrate Foods*				*6¼*		*9¼*		*7¼*		*8¾*		*6¼*		*8½*
Tea	2·8	3·0	2·3	*30¼*	3·0	*29¾*	2·2	*32¾*	2·0	*33¼*	1·5	*32¾*	1·8	*34*
IV. *Outlay on Tea*				*4½*		*5½*		*4½*		*4¼*		*3*		*3¾*
V. *Outlay on Sundries* ..				*per ration* *8½*		*per ration* *10*		*per ration* *7¾*		*per ration* *9½*		*per ration* *10½*		*per ration* *13¼*
Total Outlay				*51¾*		*56¾*		*44¾*		*50½*		*37¾*		*46*

* incl. suet and dripping. † incl. dripping. ‡ incl. small quantities of ham ; prices per lb. are given for bacon only.
§ quantities purchased approx. ‖ incl. between 1·5d. and 0·5d. spent on condensed milk.

we have given figures relating to the weekly pre-war consumption per person of the several kinds of foods, based on two large-scale inquiries. The figures in the first column were obtained from the data published by Sir John Orr for 1934, while the second set of figures was derived from the budgets for 1937–38 of industrial households, collected by the Ministry of Labour. The figures in column 3 refer to the average consumption of groceries for the pre-war year 1938–39, as calculated from the data of our sample *on the assumption that the total number of consumers is represented by the number of people who absorbed* 17·6 *oz. of sugar per week.* It will be seen that for the ' special ' foods mentioned above the quantities are much higher than the corresponding ones in columns 1 and 2, due, of course, to the purchases made by 'casual' customers. The figures in column 3 are not, therefore, fully comparable with those in the first two columns.

It would, of course, have been possible to correct the figures in column 3 with the aid of consumption data obtained from pre-war budget inquiries, and thus to try to eliminate the margin of casual consumers. This, however, would not have solved our problem as to changes in actual consumption, but would only have shifted it, as, for the first year of the war, when consumption was curtailed not only through rationing but also through a general scarcity of certain unrationed foods and rising prices, we have no reliable means of estimating the proportion of 'full' customers—i.e. persons obtaining all their groceries from the sample shops, *though not necessarily all of them from the same shop*[1]—and casual customers. We should therefore be left without any stable basis of comparison for the first twelve months of the war. Since September 1940, there developed a definite tendency to sell unrationed as well as rationed goods to registered customers only, and also of discriminating in the distribution of scarce but unrationed foods between those registered with the shop for all their rations and others buying part of their rations elsewhere. Consequently the casual customer began to disappear,[2] and one is probably not much wrong in assuming that from September 1940, our data indicate very nearly the actual average consumption per head per week. There remain, of course, some goods part of which is bought from shops outside our sample group, notably flour, cake, and sausages, but there is no indication that because of this the demand for these foodstuffs in the sample shops should tend to fluctuate.

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[1] It need not be actually the same person who buys all her groceries from shops in this group, so long as the equivalent of what she obtains from elsewhere is being bought by some outsider from the sample shops.

[2] There was probably little casual custom in the sample week in January 1940, which was the first week when rationing was in force, as, at that moment, retail stocks of many unrationed foods were very low.

SUDDEN CHANGES IN DEMAND

It is, perhaps, necessary to draw attention to certain rather striking irregularities in our figures of war-time consumption in Table I. Our sample week in September 1939, was taken at about the middle of the month, when people were collecting reserves of durable foodstuffs, especially of sugar and tea; this easily explains the remarkably high consumption figures of these foods.[1] By January 1941, jam and marmalade were becoming scarce in some localities, and people expected them soon to be rationed; hence demand rose above normal. At the same time, with re-registration about to start, shops tended to compete for new custom, and, possibly, released reserves of some especially attractive commodities. The increase in the consumption of bacon and cooked meat in January 1941, as compared with September 1940, may be due to the shortage of butcher's meat, which caused the Government to issue a certain amount of corned beef to retail shops in some localities. The relatively low price of the corned beef would also explain the fall in the average price of cooked meats.

It seems likely that with the beginning of rationing in January 1940, the number of customers for butter became closely related to the number of customers for sugar.[2] A similar connexion cannot be assumed with respect to bacon, which can also be obtained from butchers' shops and which, moreover, soon became in part derationed. Rationing of tea started on July 9th, 1940, but as for this commodity no registration with any special shop is necessary it may be that a small proportion of the 'regular' customers are buying certain brands of tea from shops outside our sample.

The average prices for the several foods have been calculated by dividing the money turnover for any given type of food by the total quantities sold. Hence, changes in price do not represent, as a rule, changes in the price of a single commodity, but changes in the actual cost per unit of a specific group for the average housewife, allowing for substitution within the group. At present such substitution is in the majority of cases due to changes in supply: people do not so much choose what they want but take what they can get—an imported instead of a home produced egg, or *vice versa*; beef instead of pork sausages; etc. Two noticeable exceptions are margarine and tea, for both of which price still regulates the demand for the more expensive kinds. There is, however, a clear indication of a relative rise in the demand for the higher priced qualities—possibly because of a general deterioration of the standards.

[1] At the same time, certain foods became scarce in small general stores, which probably explains the sudden rise of the number of 'full' customers in our sample of 'specialist' shops. Cf. Table II, column 12.

[2] Rationing of margarine and cooking fats began on July 22nd, 1940, and thus affects the data in Table I only from September 1940, when on our assumption the number of casual consumers had become insignificant.

Indices of Prices and Consumption

Table II pictures the changes since the beginning of the war in a less detailed but more comprehensive form than Table I. The first five columns of Table II show price indices for the first four major food groups enumerated in Table I, and also for all groceries taken together. These indices are based on average prices, as defined above. The index number for each period is obtained by valuing the quantities bought during the period at the prices of that period and then adding them (numerator), and dividing the sum by the values of the same quantities at the prices of the base period. The quotient is then multiplied by 100. Thus the weights assigned to the price changes are changed in each successive period.[1] The indices therefore give the changes in prices on the assumption that before the war the consumers bought the same quantities as they did in the sample week in question.

This way of calculating the price indices seemed to be the best for endowing them with some real meaning at a time when consumption is changing rapidly, and, in general, is no longer regulated by the price mechanism and consumers' preferences, but by the flow of supply. The 'weights' used for calculating the price indices have not been corrected for the decline in the number of casual customers during the first year of the war, as any such correction would necessarily have to be an arbitrary one; it would, moreover, affect the actual index numbers very little, if at all.

For the reasons given in some detail when discussing the contents of Table I, we have also made no allowance for the decrease of casual custom in calculating the indices of real consumption,[2] shown in Table II, columns 6–11. We simply assumed the number of sugar 'rations' sold during each period to be representative for the number of consumers, and, hence, to supply a basis for assessing expenditure per head. Consequently these index numbers exaggerate the total decline in individual consumption during the first twelve months of the war.

Even so the indices throw some useful light on the changes in the relative importance of the several food groups. From January 1940, the only group of indices which for six following months is definitely inflated by 'casual' purchases[3] is the group of protein foods. For the group of carbohydrate foods the effect of this inflation appears to be small. Expenditure by casual customers

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[1] The formula is: $\frac{\Sigma p_{m.n}\ q_{m.n}}{\Sigma P_n\ q_{m.n}}$, where the small letters refer to the current and the capital letter to the base period. P_n stands for the price of the *n*th commodity in the base year, $p_{m.n}$ for the price of the *n*th commodity in the sample period *m*, and $q_{m.n}$ for the quantity of the *n*th commodity in the sample period *m*.

[2] Obtained by correcting the indices of expenditure for changes in price, using the price indices given inTable II, columns 1–5.

[3] Because of the 'specialist' type of the shops.

TABLE II

	Price Index					Index of Real Consumption						
	1 Fats	2 Protein Foods	3 C'hydr. Foods	4 Tea	5 Total	6 Fats	7 Protein Foods	8 C'hydr. Foods	9 Tea	10 Sundries	11 Total	12 Index of Sugar Rations Sold
1938—1939 Average	100	100	100	100	100	100	100	100	100	100	100	100
1939												
September	105	107	116	98	107	103	88	130	130	107	103	113
October	116	117	139	100	118	96	71	111	123	83	87	103
November	120	128	140	105	125	89	69	93	99	64	78	103
December	127	131	143	107	129	66	70	97	102	97	80	103
1940												
January	124	132	139	108	128	54	63	83	95	70	67	102
February	124	131	135	109	128	53	75	93	94	76	75	106
March	127	144	136	109	135	52	64	94	87	77	69	108
April	127	131	136	109	128	56	68	94	87	87	93	105
May	129	136	135	109	131	57	69	104	87	83	75	110
June	128	139	133	110	132	47	58	84	81	100	68	118
July	129	145	134	110	134	57	52	95	89	105	70	118
August	128	147	146	110	139	41	43	115	64	83	60	118
September	129	150	141	108	138	40	39	71	62	87	53	116
October	133	153	145	111	142	33	40	72	66	80	51	118
November	134	151	147	111	141	34	40	74	68	86	53	117
December	133	150	142	112	140	37	42	85	67	122	62	108
1941												
January	135	151	139	112	140	39	46	95	77	110	64	106
February	136	154	150	113	143	37	38	97	75	104	59	111

must, of course, also have continued to have some effect on the 'sundries' group, but it was probably never very substantial, and as we have no real means of gauging it, we may as well disregard it. The variations in the index of real consumption of the fat group since January 1940, are mainly due to changes in the butter ration, which affect the total outlay on fat foods; but it appears from our data that when the butter ration was increased to 8 oz. a head a week, average consumption rose to only about 4½ oz. a head for the families represented by our sample (in May 1940; Table I).

A fall in our index of real consumption of fats does not necessarily refer to an actual decline in the total quantity of fats purchased per head, but may be due to a substitution of cheaper fats for butter (cf. the data for September 1940, and January 1941, in Table I and Table II); that is, it indicates a 'saving' brought about not by a decrease in the quantities consumed but by a decline in quality. A similar conclusion probably holds good—although to a lesser degree—for the protein group, where bacon, ham, and eggs were partly replaced by cheese and sausages.

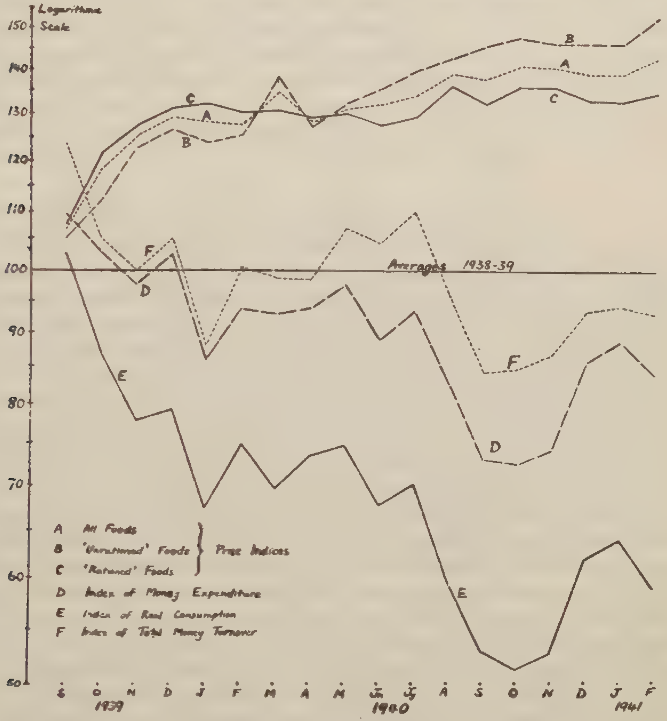
Prices of Rationed and Unrationed Foods

It is interesting to consider the diagram in conjunction with the data given in Table II. The price index curves B and C in our diagram deal with food groups very different from those pictured in Table II. There the groups are made up so as to represent the main nutritional types of foodstuffs, while in the diagram the foods are classed into 'unrationed' (curve B) and 'rationed' (curve C) foods. Our group of 'rationed' foods comprises the following commodities: all fats, including butter; bacon and ham; sugar; and tea. The remaining foods, with the exception of 'sundries',[1] are represented by the group of 'unrationed' foods. Curve A is based on the indices in Table II column 5. The 'rationed' foods supplying the data for curve C were rationed only gradually; first, in January 1940, sugar, butter, and bacon and ham (partly); then, from July 9th, 1940, tea, and, lastly, from July 22nd, 1940, also margarine and cooking fats. Dripping and suet remained unrationed, but the quantities sold were relatively so small that it was not worth while to exclude them from our index figures. Thus for the first four months of the war none of the foods represented by curve C were actually rationed, and a comprehensive rationing system was established for them only after a lapse of eleven months.[2]

[1] In the absence of sufficient information about the prices of the various kinds of food included under 'sundries,' they have been assumed to have changed in proportion to the prices of all other foods. This is probably understating the average rise in price of the 'sundries' group.

[2] The sudden upward jump in curve C at that point (August, 1940) is quite accidental; it is caused by the steep increase in the purchases of sugar (price index 166) to over 24 oz. a head a week, due to the extra rations allowed for jam making.

The relative movements of curves B and C are interesting. The diagram is drawn on a semi-logarithmic scale, so that parallel movements of any two or more curves represent identical rates of change. It will be seen that over the whole period the upward



Curves A and E are columns 5 and 11 from Table II.
B and C are computed on the same plan as A.
D is interpolated from Total Outlay in Table I; it represents the product of the numbers in A and E, divided by 100.
F is the product of Table II column 12 (Index of Sugar Ration) and D, divided by 100.

trend of curve B is much steeper than that of curve C. Actually, by February 1941, the index of 'unrationed' foods had risen from 100 to 154, and that of 'rationed' foods only from 100 to 135.

After mid-February 1940, the two curves shift into fundamentally new positions: curve B settles above curve C, rising upward at a fairly steady rate for six months till October, 1940. From July to October 1940, the curve of 'rationed' foods has a similar but less distinct trend. Then the upward movement of the index of 'rationed' foods ceased, and in February 1941, the index was actually lower than in October 1940, while that of 'unrationed' foods showed a further rise. It thus appears that the strict control of the prices of 'rationed' foods had a certain effect in keeping down the cost of living.

Curve D in the diagram shows the money outlay on all groceries per sugar ration bought (as defined above), and the widening gap between money outlay and real consumption can be seen by comparing the movements of curves D and E. Curve F shows the relative changes in the total turnover; it thus represents the money outlay pictured in curve D, multiplied by the index of sugar 'rations' sold (Table II column 12).

Summary

We can now summarize the main findings of our analysis: It seems that during the first eighteen months of the war the number of 'full' customers in our sample shops increased by at least 10 per cent. We have reason to assume that during the same period the number of casual customers—which for certain commodities was very large[1]—became insignificant. A rough correction for expenditure due to casual custom of the average figures of total turnover for 1938–39, gives the outlays on all items per 'full' customer as approximately 41d. a head a week.[2] In January 1941, this outlay was up to about 46d. This, however, represents the average expenditure during a week when it was probably abnormally high (for various reasons, which have been discussed above) and, moreover, most likely accompanied by an exceptional decrease in the expenditure on meat. Hence our data give us little cause to think that as regards the families typical for the customers of our sample shops, money outlay per head on groceries had risen during the first eighteen months of the war. As the price index of all groceries rose by 43 per cent, the cut in real consumption must have amounted to about 30 per cent. Part of this 'saving' was, however, represented not by a cut in the actual quantities consumed but by a decline in quality.[3]

The two food groups the prices of which increased most steeply were those of first class protein and of carbohydrate foods. If we subdivide the groceries into two main classes of 'rationed' and 'unrationed' foods we find the average rate of increase of the prices of 'unrationed' foods to have been 1½ times that of the prices of 'rationed' foods, for which latter group price control was more comprehensive.

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[1] For bacon it appears to have been about 100 per cent. of the number of 'full' customers, for cheese about 90 per cent., and for butter about 25 per cent.

[2] Average total outlay per sugar 'ration' (17·6 oz.) sold was 51¾d. a week (Table I). Of this about 11d. can be assumed to have been spent by 'casual' customers.

[3] This, of course, does not take into account any decline in quality which is due to the deterioration of the standards of specific foods, since such decline remains invisible in the indices of prices and consumption.

Our indices of real consumption (Table II) indicate a growing relative importance of the two groups of carbohydrate foods and 'sundries.' It is worth noting that from September 1940, when on our assumption the casual customer had ceased to play any important rôle, to February 1941, there seems to have been no further decline in the real consumption of essential protein foods. Moreover, there is some indication of a slight general improvement in the total consumption per head during this last period.

T. Schulz.

GERMANY'S WAGE BILL AND NATIONAL INCOME IN THE FIRST YEAR OF THE WAR

Some material is now available showing the changes which have taken place in employment and earnings in Germany since the outbreak of war. These figures may be used in conjunction with pre-war data of the national wage bill to obtain a tentative estimate of the movement of the total wage bill in 1939 and 1940.

One may go one step further and use the fact that the share of wages and salaries in the national income does not change greatly from one year to another to calculate Germany's national income in 1939 and 1940 on the basis of the estimated wage bill. This approach would afford a certain check of the national income figures circulated by German and other writers.

The figures for the years 1932 to 1938 are given below:

Old Reich	No of insured wage earners (million)	No of insured salary earners(*a*) (millions)	Wage Bill (milliards of RM)	Salary Bill(*a*) (milliards of RM)	Net National Income (milliards of RM)	Wages in % of National Income	Wages and Salaries in % of National Income
1932	9·98	2·69	11·32	5·76	45·2	25·0	37·8
1933	10·89	2·79	12·05	5·72	46·5	25·9	38·1
1934	12·57	2·97	14·66	6·27	52·7	27·8	39·7
1935	13·52	3·20	16·75	7·08	58·6	28·6	40·6
1936	14·35	3·46	18·75	8·06	64·8	28·9	41·4
1937	15·42	3·76	21·35	8·98	72·6	29·4	41·7
1938	16·39	3·97	23·75	9·86	79·7	29·8	42·2

(*a*) Non-insured employees, public officials, Armed Forces, etc., excluded.

In the first half of 1939 wages were by RM 1·8 and salaries by RM 0·7 milliards higher than in the corresponding period of 1938, so that shortly before the war the total wage and salary bill was running at an annual rate of approximately RM 38·5 milliards.

This increase is mainly explained by the growth of employment (+ 1·7 million) and the extension in average working time (from 7·75 hours to just over 8 hours), but there was also a rise in hourly earnings. The share of wages and salaries in the national income is not likely to have changed greatly in this short period and small changes would not affect the result; so we may assume a constant percentage. On this assumption the national income of the Old Reich was at the rate of RM 91 milliards just before the war.

Old Reich	No of insured wage and salary earners (millions)	Wage and Salary Bill (milliards of RM)	Est. Net National Income (milliards of RM)	Est. Share of wages and salaries in the National Income (%)
1939(*a*)	22·0(*b*)	38·5	91·2	42·2

(*a*) Pre-war figures based on employment and wage statistics in the first half of 1939.
(*b*) July 1939. No separate figures for wages and salary earners are available.

To arrive at the pre-war wage and salary bill of *Greater* Germany (excluding incorporated Poland), we should add about 10 per cent. to allow for the higher number of workers and salaried employees which was officially put at 24·46 million in the summer of 1939. But a slight deduction must be made because of the lower level of wages in Sudetenland. Thus wages and salaries in Greater Germany may have corresponded in the middle of 1939 to an annual total of RM 41·5 to 42 milliards, a figure which would imply a national income of roughly RM 99 milliards.

Employment in the same territory of Greater Germany was 22·67 million at the end of 1940. This figure includes about 1·5 million foreign workers; but in addition just over 1 million prisoners of war were working in Germany late in 1940. Thus total employment amounted at the end of last year to about 23·7 million, a decrease of 3 per cent. since summer 1939. Average weekly earnings of workers increased in the same period—or rather between June 1939 and September 1940—by 4 per cent.,[1] a rise which is partly due to the 1·5 per cent. extension in average working hours. Nothing definite is known about the earnings of salaried employees, but as the 'wage stop' is not applied to them in the same way as to workers, one may assume that salaries have risen at least as much as wages. Prisoners of war receive, of course, less pay for their work than German and foreign workers. If all these factors are taken into account, one may conclude that the total wage and salary bill increased between the summer of 1939 and September 1940 by 1 to 2 per cent. The relative share of wages and salaries in the national income is not likely to have changed appreciably. Thus we get the following picture:

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[1] Real weekly earnings remained constant as the official Cost of Living Index has also gone up by 4 per cent.

Greater Germany (excl. incorporated Poland)	No. of wage and salary earners (millions)	Estimated Wage and Salary Bill (milliards of RM)	Estimated Net National Income (milliards of RM)	Estimated share of wages and salaries in the National Income) (%)
1939(*a*)	24·4(*b*)	41·75	98·9	42·2
1940	23·7(*c*)	42·3	100·2(*d*)	42·2

(*a*) Pre-war figures based on employment and wage statistics in the first half of 1939.

(*b*) Including about 500,000 foreign workers.

(*c*) End 1940 including foreign workers and prisoners of war.

(*d*) Excluding loot and contributions from dominated countries.

The incorporated part of Poland with its pre-war population of about 12 million is not included in these figures. Assuming that the national income per head in Western Poland is between 50 and 66 per cent. of that in the Old Reich,[1] some RM 7–10 milliards have to be added to our figure of RM 100 milliards. This estimate compares with a figure of RM 100 milliards for 1940 recently given in Germany. It should be noted, however, that the computation of the wage and salary bill and of the net national income of Germany differs in many respects from the terms as defined in this country. These are, therefore, not directly comparable with British or American data.[2]

K. MANDELBAUM.

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[1] This is, of course, a very rough guess. Poland's total national income per head of the population was before the war only 36 per cent. of that in the Reich. But one must allow for the great difference between the very poor eastern districts and the more highly developed western provinces incorporated into the Reich. In these provinces the pre-war consumption e.g. of sugar or tobacco and the density of the railroad and highway system was about three times as high as in East and Central Poland.

[2] The net national income as calculated in Germany equals the sum of all personal and corporate incomes plus the excess of the cost of certain 'consumable' public services over the sum of taxes and fees paid out of income, internal public borrowing and the greater part of the profits from public undertakings. The resulting figure is higher than the national income at factor cost as defined in this country, but lower than the national income at market prices. To make the German figure comparable that part of indirect taxation added under the heading 'In den Privateinkommen nicht enthaltene Steuern' should be deducted to arrive at the national income at factor cost. This item fluctuated from 1932 to 1938 between RM. 2·2 and 2·6 milliards. For 1938 we would obtain a national income of RM 77·4 milliards for the Old Reich. This compares with the British net national income as calculated in the White Paper (Cmd. 6261, Table A). If it were desired to have the national income at market prices all indirect taxes should be added back. For Great Britain the White Paper estimates indirect taxes, rates, etc., at £643 million for 1938; the corresponding German figure would be of the order of RM 12·5 milliards.

DIARY

FINANCE

Government expenditure on supply services in the first three months of the new Budget year was at an annual rate of £3,950 million. In this way the level of supply expenditure anticipated in the Budget for 1941–42 has been already reached. In the period January-February this expenditure was £4,200 million per year, in March it jumped to £5,200 million. The latter figures are not comparable with those of the current financial year because the value of supplies from the U.S.A. under the Lease and Lend Act, and payment under existing orders in that country are now being excluded from the expenditure figures. These items, according to the Chancellor of the Exchequer, exceed in the current financial year £800 million and thus the present annual rate of expenditure is probably £500 million (or more) higher than in the period January-February.

The boom on the bond market caused by the anticipation of the Government's replacing the present tap issues by new ones, either with a lower interest or a longer term, continued. It is probably for the same reason that the sales of securities at present on tap (2½ per cent National War Bonds and 3 per cent Saving Bonds) were in June at a high level of £95 million. This compares with a monthly average of £75 million in the period January-April. The May figure was £165 million but this included the yield of the London War Weapons Week.

BUILDING SOCIETIES AND "SMALL SAVINGS"

The Shares and Deposits in Building Societies fell in 1941 by £17 million while in 1938 they rose by £43 million. This means a fall in current saving of this type by £60 million, as compared with 1938 which doubtless benefited the National Saving Campaign (and in part at least was caused by the latter). The sales of National Saving Certificates and 3 per cent Defence Bonds and the increase in Saving Bank Deposits was in 1940 about £430 million higher than in 1938. As we see, a part of it may be accounted for as a diversion of savings from Building Societies.

OFFICIAL AND UNOFFICIAL RATIONING

On the advice of the retailers' and suppliers' committees appointed to assist the Board of Trade on matters of the Clothes Rationing Order, three amendments have been made to the original scheme. (1) A more detailed and modified list of coupons needed for clothing and footwear has been issued which, on the whole, seems to benefit the consumer and to remove some inconsistencies of coupon ratios. At the same time, articles exempted from rationing have been specified in greater detail. (2) Reduced coupon rates for specified summer wear have been introduced for a limited period. This seems to be a concession to traders with a view to reducing " frozen " stocks. The reduction in coupons needed seems to be small enough to prevent consumers from spending coupons too freely on these goods which are of a less durable and less essential character. (3) In order to prevent traders from selling as second-hand at black market prices clothing which is really new, second-hand articles are to be coupon free only if sold below certain maximum prices. If the price limits are exceeded the full number of coupons must be surrendered for the purchase.

The limitation of domestic supplies of coal to a ton per month for non-industrial premises can hardly be called rationing. Few householders (apart from offices, flats, hotels, etc.) use 12 tons a year and it is said that 75 per cent. of houses cannot even store a ton of coal. There are at least 12 million householders in Britain. If each were actually to demand 12 tons a year, domestic supplies would require 144 million tons, which is roughly three times the estimated peace-time consumption. Moreover, the Secretary of Mines, when announcing the 'limitation,' added explicitly that 'there is no guarantee that the amounts will in all cases be forthcoming.' There is, therefore, no restriction of domestic consumption nor a guarantee that the goods will be supplied; two conditions which are the essence of sound rationing. Long hours of daylight are obviously more favourable to coal transport and it seems reasonable, therefore, to encourage the storing of coal, particularly in what are now termed 'importing areas.' But it seems also clear that communal coal dumps should be built up, which would allow an equitable distribution in the difficult winter months which we have to face, while the present scheme is biassed in favour of the houses with big storing facilities and based on a haphazard supply. As in past weeks, coal merchants will continue to apply their own private rationing which may or may not fulfil the task of satisfying essential needs.

This type of private rationing is spreading rapidly over innumerable commodities—cigarettes, beer, tomatoes and fruit, potatoes and cake are locally and privately rationed on widely varying principles. The common sense of retailers is trying to cope in this way with a situation which is beyond their control, with the result that there is a good deal of discrimination between old and new, regular and casual customers in different localities. Systematic rationing of such commodities in short supply would mean a more equitable distribution and ease the difficult task of the retailer facing grumbling customers. It is not impossible to design suitable rationing schemes for these commodities and it may be hoped that the administrative machinery will soon put in use the spare pages of the new ration books.

Distribution of Eggs and Unrationed Food

Since June 30th, eggs have been rationed, and the Ministry of Food has announced that in July each domestic consumer can expect to obtain at least four eggs, but that no guarantee can be given that this number will be available for every consumer in every locality in Great Britain. In Oxford, the first week in July remained 'eggless' for many people registered with small shops, while some larger shops allotted to their customers between two and three eggs a head. It is to be hoped that this state of muddle may soon be replaced by some more orderly form of distribution. At present it appears as though the concession that individuals may keep up to 50 hens without surrendering any eggs has thrown the Ministry's egg scheme somewhat out of gear. According to *The Times* (June 26th), this concession results in the egg pool's losing about one-fifth of the total eggs produced. This will probably lead to the development of a flourishing black market in home produced eggs, which, indeed, may make it remunerative for a poultry keeper to reduce a larger flock of hens to the number which exempts him from control. The most satisfactory solution, it seems, would be to allow feeding stuffs for hens only to people who, in return, surrender a minimum fixed number of eggs per hen, which should be lower for, say, the first twelve birds than for larger numbers.

The additional distribution of sugar in July at the rate of two pounds a head a week is very welcome during the soft fruit season, although, in fact, people who do not grow their own fruit are likely to find it difficult to use the sugar for jam making, as the market is practically swept clear of all price-controlled fruit. As the stone fruit crop is expected to be poor, owing to the severe frosts in spring, the prospects for jam making in autumn with bought fruit do not appear to be promising either.

The shortage of potatoes has led to their unofficial rationing and, of necessity, people have to increase their consumption of bread. In Oxford, 'Bread sold out' has become a familiar notice in the windows of bakeries, though sometimes small loaves of relatively expensive fancy breads are to be had when ordinary white or brown bread cannot be obtained. It seems, in fact, that every week people have to spend more time in obtaining the food they need.

Mr. Frederick Aldridge, the newly appointed Director of Unrationed Food Distribution, has some pressing tasks in front of him. His foremost task should obviously be to see that people are sufficiently supplied with those staple foods the consumption of which has been so strongly urged upon the public by the Ministry of Food, namely potatoes, vegetables in season (including salad vegetables), wholemeal bread, and oatmeal and rolled oats. The new Director himself has explained that it will be his job to see that housewives all over the country have the chance of a fair share of the limited supplies available. This, surely, implies that this fair share must be brought within the reach of all, and especially of those who, up to now, had to go without it, because they have no time for standing in queues and rushing from shop to shop. The subsidies paid out by the Exchequer to keep down the prices of food will, in fact, only prevent the *actual* cost of living from rising if people are supplied with a sufficiency of inexpensive foods, and are not being forced to replace cheap kinds of food to which they were accustomed by absolutely dearer foods.

OIL AND THE DURATION OF THE RUSSIAN CAMPAIGN

Large scale land operations of mechanised armies such as are now being undertaken by the Germans in Russia devour considerable quantities of oil. Germany may not be short of this important war material but her current supplies and stocks are limited and are likely to become a determining factor in the duration of the Russian campaign, provided the Russians are powerful enough to halt the Germans somewhere in the wide territory of the Soviet Union.

There are, of course, no precise and reliable data of German production and consumption of oil but the problem can be stated in broad outline. To be on the safe side it will be wise to assume rather high figures for German controlled output while taking low estimates for consumption. Let us, therefore, assume that the output of the New Reich both from natural sources and from synthetic production totals about 6 million tons per annum. To their home production may be added the output of the Roumanian oilfields at the rate of, say, 6 million tons a year. Current supplies of the German controlled territories would then amount to about 1 million tons per month.

We may safely assume that at least one-third of this total goes into civilian consumption of Germany and occupied Europe and that one sixth represents normal requirements of the armed forces at home and in the occupied countries. It would appear, therefore, that for the conduct of operations in Russia rather less than half the current output of oil will be available.

There can be no doubt that the oil consumption of 150 to 200 divisions which the Germans are said to be employing on the Russian front exceeds considerably the margin of 500,000 tons which can be freed out of current output for these operations. It is estimated that the Germans used up about 500,000 tons of oil during the Polish Campaign when about 60 divisions were employed for about a fortnight in active fighting. It has also been reported that the 120 divisions used for the attack on the western countries consumed considerably more than 1 million tons of oil. If we reduce these figures by 25 per cent., to be on the safe side, and if we assume that the Germans are employing 180 divisions on the Russian front, where they have the travel great distances, their consumption of oil may be estimated to be at least 1½ million tons a month. As current output cannot provide more than ½ million tons towards this consumption, each month of large scale warfare in the East will, therefore, drain German oil stocks by about 1 million tons. Hence it will depend on the size of these stocks how long the Germans can maintain the full pressure of their attack.

For obvious reasons no reliable figures of German oil reserves are available. But various experts seem to agree that after the defeat of the western countries oil stocks were of the same order as before the outbreak of war and soon afterwards slightly higher. If we take again a high estimate we may put German stocks at 5 to 6 million and Roumanian stocks at slightly more than 1 million tons. It is evident, however, that not all these stocks are available for military operations in the East. Normal civilian and military needs in the Nazi controlled areas demand considerable stocks in the distributive channels all over the territory. If the safe minimum of these distributive reserves which cannot be thrown into the Russian battle is put at 2 to 3 million tons, disposable stocks would be of the order of 4 million tons.

As the excess of current consumption over current supply was estimated to be in the neighbourhood of 1 million tons a month, Germany could theoretically maintain her large scale attack for about 4 months if she risked running down her oil stocks to the bare minimum of essential distributive reserves.

If allowance is made for the effect of air raids on German and Roumanian refineries and stores and of transport difficulties, and if it is remembered that our output and stock figures are likely to be overestimated and the consumption figures underestimated, it may well be that the alleged German hopes to finish the Russian campaign in ten weeks represent a true estimate of the time-limit which their present resources set to their adventure. In other words, if Russia can hold out against the German onslaught for three months and if the policy of destroying all material of potential use to the enemy is carried out methodically, so that the German forces cannot replace their oil from Russian sources, German operations will be slowed down, for lack of oil. Even a shorter period of active fighting would strain Germany's oil reserves so considerably that she will hardly have enough to risk any other large scale adventure for months. On the other hand it should be noted that large scale air operations are economical compared with the oil consumption of motorised armies and could be carried out on the basis of Germany's current output. It may, however, well be that the real bottleneck for Germany will not be the shortage of oil in general, but the shortage of lubricating oil, which cannot be supplied in sufficient quantities from German occupied Europe. Little is known about German stocks of this important raw material. But should a serious lack develop in this field it would affect not only the motorised forces but also the whole industrial machinery of the Continent.

PROGRESS OF CONCENTRATION

Varying degrees of progress have been made with concentration in different industries. The *Daily Telegraph* of July 2nd reports that the process is virtually completed in the cotton spinning industry and is at an earlier stage in weaving. 117 spinning factories have already been closed, 81 are to be shut in the near future while 277 have been listed as nucleus mills. Only 30 mills remain to have their fate decided. The report also stated that so far 14,000 to 15,000 operatives, mostly spinners, have been transferred from closed spinning and weaving factories, the majority to war factories and the remainder to nucleus firms, while at the same time there are only a few hundred operatives unemployed. It is interesting to compare these figures with estimates for the release of labour from the cotton industry published in No. 7 of this volume of the BULLETIN. It was there estimated that when concentration was begun there were some 150,000 operatives employed in spinning. The total number of mills mentioned above is 505 of which 117 i.e., 23 per cent. are already closed. If closed mills were on the average of the same size as the nucleus mills the closing should have released over 30,000 operatives from spinning alone, as compared with the figure quoted of 15,000 for spinning and some weaving. It appears therefore that the closed mills are on the whole the smaller ones. If this conclusion is correct, it is disturbing, for there is no evidence that the larger spinning mills are more efficient. The 'maintenance' scheme for cotton spinning proposed in April by the industry has now been accepted by the Board of Trade. A maximum maintenance payment of £7,000 p.a., for 100,000 spindles (1·4d. per month per spindle) rendered idle as a result of concentration has been set, to cover various items including wages and salaries of nucleus staff, night fire-watchers, fuel, repairs, insurance, chief rent etc. The contribution from running mills is at present 1d. per spindle per month for April, May, and June. As the maintenance fund seems likely to be more than sufficient this contribution will probably be reduced in the future.

Cotton spinning is the only industry for which any comprehensive scheme for concentration has been arrived at so far, and it is perhaps significant that the scheme is on a 'maintenance' basis and does not embody any principle of sharing the profits of the industry as a whole.

In weaving, of 1019 sheds, 299 have been listed as nucleus factories, 213 have been scheduled to close[1] and 507 were still under consideration. The total weaving capacity is about 500,000 looms and it is estimated that when concentration is complete 300,000 will be in operation in nucleus firms.

The development of the technique of concentration in weaving is interesting. The scheme for private arrangements between firms to form nucleus firms was a failure and the scheme now depends on the supplies issued by the Controller. Furthermore a Statutory Rule and Order was issued, operating from June 23rd, under which a licence is required for the use of looms for weaving fabrics with a textile content of 8 per cent. or more of cotton. It is reported in the *Financial Times* of July 12th that agreement on a scheme of compensation for closed mills has now been reached. The details are not yet available but it appears to be very similar to the spinning scheme, nucleus firms paying into a maintenance fund amounts proportional to the number of looms in operation.

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[1] The *Daily Telegraph* of July 2nd said that five or six had already closed. The *Financial News* of June 28th stated that 150 weaving firms were expected to be closed by July 12th.

The Empire Surplus Scheme

For about half a year the scarcity of shipping space has threatened to create a surplus of agricultural produce in Australia and New Zealand. In the first year of the war the two countries sold all their exportable surplus to Great Britain, and in this way managed to keep their balance of payments in equilibrium. New Zealand sold 300,000 tons of meat, 115,000 tons of butter, 84,000 tons of cheese, as well as wool, in the year ending September 30th, 1940. Australia sold 260,000 tons of meat, 100,000 tons of butter, as well as sugar, wheat, flour and wool, in the year ending June 30th, 1940. The quantities contracted and sold by both countries were in some cases in excess of pre-war exports, and a considerable increase in production was made possible in some lines. The money value of the contracts was in the case of Australia about £90 million sterling, total exports being £Stg 116 million in the period June–July 1939–40 ; in the case of New Zealand the exports of produce amounted to about £Stg 45 million, with total exports of £Stg 53 million in the same period.

At the beginning of 1941 exports in both countries decreased (in the first two months in Australia by 25 per cent, in New Zealand by 10 per cent as compared with the preceding year). The British purchases of meat from New Zealand were fixed at 250,000 tons for the year ending September 1941, 50,000 tons less than in the preceding year. In Australia also the quantities to be purchased under contract will probably be reduced this year. The British Government issued two White Papers recently, outlining a scheme for the disposal of the surplus of the two countries. Britain will buy their produce as far as shipping space is available, at the prices agreed by the Ministry of Food ; the surplus which cannot be shipped will be stored, the British Government and the respective Dominion Government sharing equally in the finance of these stocks, which are intended for use in Europe after the war. The prices to be paid to farmers for this surplus which cannot be shipped will be agreed between the two Governments concerned on such a basis as to keep the industry operating efficiently while avoiding the creation of unmanageable surpluses.

The difficulties of the two Dominions arise plainly from the fact that everything they produce can be obtained in the United States and Canada, and that in the present situation it is common sense that it should be obtained there to save shipping space. But there is no reason why the two Dominions should suffer any disadvantage on this account ; in so far as Britain obtains food " on lease and lend " from the United States, she will be able to finance a corresponding amount of stocks in Australasia, and in so far as she pays for American food, the United States may well be induced to finance to a corresponding extent the surplus which is thereby created in the Dominions. If the whole of the surplus stocks were financed by either Britain or the United States, then the Dominions' balance of payment (which at present is probably not more than slightly active, or even slightly passive) could not be upset by shipping difficulties, while under the present arrangement considera-ations of the balance of payments will unnecessarily influence the problem of shipments (especially if, as it seems to be the case, the Dominions' imports cannot be much more reduced). It is obvious, for example, that all wheat and flour should be obtained from Canada, while the small Australian surplus should be stored ; but if that means a disadvantage to Australia because of her share in the finance and, possibly, because of lower prices paid for the surplus, she will press for shipping space to be made available.

The White Paper mentions two ways of reducing the surplus : the extension of canning and deboning of meat, drying of milk etc. It must be borne in mind that this uses up not only some man-power, but also raw material which must be imported. The other way is the finding of new markets, which is largely a question of prices and purchasing power.

IRON AND STEEL

Two important administrative measures have been taken in the last three weeks. A revised system of distribution was announced on June 23rd. The general principle appears to be increased centralisation. Under the new system no steel will be obtainable for any purpose without the authority of the Government Department specified as responsible in the revised list published on June 23rd. The Ministry of Supply is made responsible for the supply of steel for motor vehicles and spare parts for supply to all Departments and industrial users. A second census of steel stocks was taken in the first week of July.

Rumours current about the middle of June that iron and steel prices for the period beginning July 1st would be raised, proved to be groundless and in spite of increasing costs the prices established in November 1940 (involving an average increase of 12 per cent) have been maintained.

Imports of iron and steel manufactures in 1940 were valued at £45·3 million (1939, £17·6 million) while imports of ore and scrap amounted to £16·5 million in 1940 and £9·7 million in 1939. It is expected that imports of structural steel will now begin to decline as factory construction has probably reached its peak. The announcement in mid-June that the importation of 350–400,000 tons of scrap from the U.S.A. had been authorised caused some surprise in view of the fact that even in the steel centres much steel still lies on bombed sites and much has yet to be collected in London and elsewhere.